

WHAT IS CLAIMED:

1. A ball and socket joint prosthesis for use in arthroplasty comprising:

a body for implantation at least partially within the medullary canal of a long bone defining trabeculae in the proximal cancellous bone thereof and defining lamellae in the cortical bone thereof, said body including a proximal portion thereof and a distal portion thereof, said proximal portion having a medial periphery thereof, said proximal portion including surface features thereof on a substantial portion of said proximal portion, said surface features being positioned to optimally transfer load from the prosthesis to the long bone, wherein said surface features are elongated in a first direction of said features; and wherein said surface features are positioned so that the first direction of said features are from about 70 degrees to about 110 degrees with respect to the proximal portion of said body.

2. The joint prosthesis of claim 1:  
wherein said surface features are elongated in a first direction of said features; and  
wherein said surface features are positioned so that the first direction of said features are substantially normal to the medial periphery of the proximal portion of said body.

3. The joint prosthesis of claim 2:  
wherein said surface features comprise a plurality of ribs elongated in a first direction of said features.

4. The joint prosthesis of claim 3, wherein the ribs comprise steps.

5. The joint prosthesis of claim 4, wherein at least a portion of the surface of said ribs is adapted to enhance bone growth thereto.

6. A hip joint prosthesis for use in arthroplasty comprising:

a body for implantation at least partially within the medullary canal of a long bone defining trabeculae in the proximal cancellous bone thereof and defining lamellae in the cortical bone thereof, said body including a proximal portion thereof and a distal portion thereof, said proximal portion having a medial periphery thereof, said proximal portion including a plurality of ribs extending from a substantial portion of the periphery of said proximal portion, said ribs being elongated in a first direction and being positioned so that the first direction of said ribs are from about 70 degrees to about 110 degrees with respect to the periphery of the proximal portion of said body.

7. The hip joint prosthesis of claim 6, wherein at least a portion of the surface of said ribs is adapted to enhance bone growth thereto.

8. The hip joint prosthesis of claim 7, wherein at least a portion of the surface of said ribs comprises at least one of a surface roughness, a porous coating and a bioceramic.

9. A joint prosthesis for use in arthroplasty comprising:

a body for implantation at least partially within the medullary canal of a long bone defining trabeculae in the proximal cancellous bone thereof and defining lamellae in the cortical bone thereof, said body including a proximal portion thereof and a distal portion thereof, said proximal portion having a medial periphery thereof, said proximal portion including surface features thereof on a substantial portion of the medial periphery of said proximal portion, said surface features being positioned to optimally transfer load from the prosthesis to the long bone wherein said surface features are elongated in a first direction of said features.

10. The joint prosthesis of claim 9:  
wherein said surface features comprise a plurality of ribs elongated in a first direction of said features.

11. The joint prosthesis of claim 10, wherein at least a portion of the surface of said ribs is adapted to enhance bone growth thereto.

12. The joint prosthesis of claim 11, wherein at least a portion of the surface of said ribs comprises at least one of a surface roughness, a porous coating and a bioceramic.

13. A stem for use in a joint prosthesis for implantation at least partially within the medullary canal of a long bone defining trabeculae in the proximal cancellous bone thereof and defining lamellae in the cortical bone thereof, comprising:

a distal portion thereof; and

a proximal portion thereof, said proximal portion having a medial periphery thereof, said proximal portion including surface features thereof on a substantial portion of the medial periphery of said proximal portion, said surface features being positioned to optimally transfer load from the prosthesis to the long bone, wherein said surface features are elongated in a first direction of said features, and wherein said surface features are positioned so that the first direction of said features are about 90 degrees with respect to the medial periphery of the proximal portion of said body.

14. The stem of claim 13:

wherein said surface features are elongated in a first direction of said features; and

wherein said surface features are positioned so that the first direction of said features are substantially normal to at least one of the trabeculae in the proximal cancellous bone, the normal lamellae in the cortical bone and the medial periphery of the proximal portion of said body.

15. The stem of claim 13:

wherein said surface features comprise a plurality of ribs elongated in a first direction of said features.

16. The stem of claim 15, wherein the ribs comprise steps.

17. The stem of claim 15, wherein at least a portion of the surface of said ribs is adapted to enhance bone growth thereto.

18. The stem of claim 17, wherein at least a portion of the surface of said ribs comprises at least one of a surface roughness, a porous coating and a bioceramic.

19. A method for producing a joint prosthesis for use in arthroplasty comprising:

providing a body including a proximal portion thereof and a distal portion thereof, the proximal portion having a medial periphery thereof;

placing surface features on a substantial portion of the periphery of the proximal portion of the body;

positioning the surface features from about 90 degrees with respect to the periphery of the proximal portion of the body to optimally transfer load from the prosthesis to the long bone; and

implanting the prosthesis at least partially within the medullary canal of a long bone.

20. The method of claim 19, wherein the placing step comprises placing a plurality of ribs on the periphery of the proximal portion of the body.

21. The method of claim 19, wherein the positioning step comprises positioning the surface features so that the first direction of said features are substantially normal to the medial periphery of the proximal portion of the body.